

**What is claimed is:**

1. An adsorbent characterized by preferential adsorption of gaseous alkene from a gaseous mixture comprising said alkene, said adsorbent comprising: a silver compound supported on a carrier; said silver compound selected from the group consisting of acetate, benzoate, bromate, chlorate, perchlorate, chlorite, citrate, fluoride, nitrate, nitrite, and sulfate; and said carrier being characterized by a BET surface area greater than about 50 square meters per gram and up to about 2,000 square meters per gram and comprising a plurality of pores having size greater than about 3 angstroms and up to about 10 microns.
2. The adsorbent of claim 1 wherein said adsorbent comprises finely divided particles of silica ( $\text{SiO}_2$ ) with silver nitrate ( $\text{AgNO}_3$ ) dispersed on and supported on said particles.
3. The adsorbent of claim 1 wherein said carrier is selected from the group consisting of refractory inorganic oxide, molecular sieve, and activated carbon in particle form.
4. The adsorbent of claim 1 wherein said refractory oxide is selected from the group consisting of pillared clay, alumina and silica.
5. The adsorbent of claim 3 wherein said molecular sieve is a carbon molecular sieve or a zeolite molecular sieve.
6. An adsorbent characterized by preferential adsorption of gaseous alkene from a gaseous mixture comprising said alkene, said adsorbent comprising: a carrier impregnated with a salt of copper selected from the group consisting of bromide, fluoride, iodide and sulfate, said carrier selected from the group consisting of refractory inorganic oxide, molecular sieve, and activated carbon, and characterized by a BET surface area greater than about 50 square meters per

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gram and up to about 2,000 square meters per gram and comprising a plurality of pores having size greater than about 3 angstroms and up to about 10 microns.

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